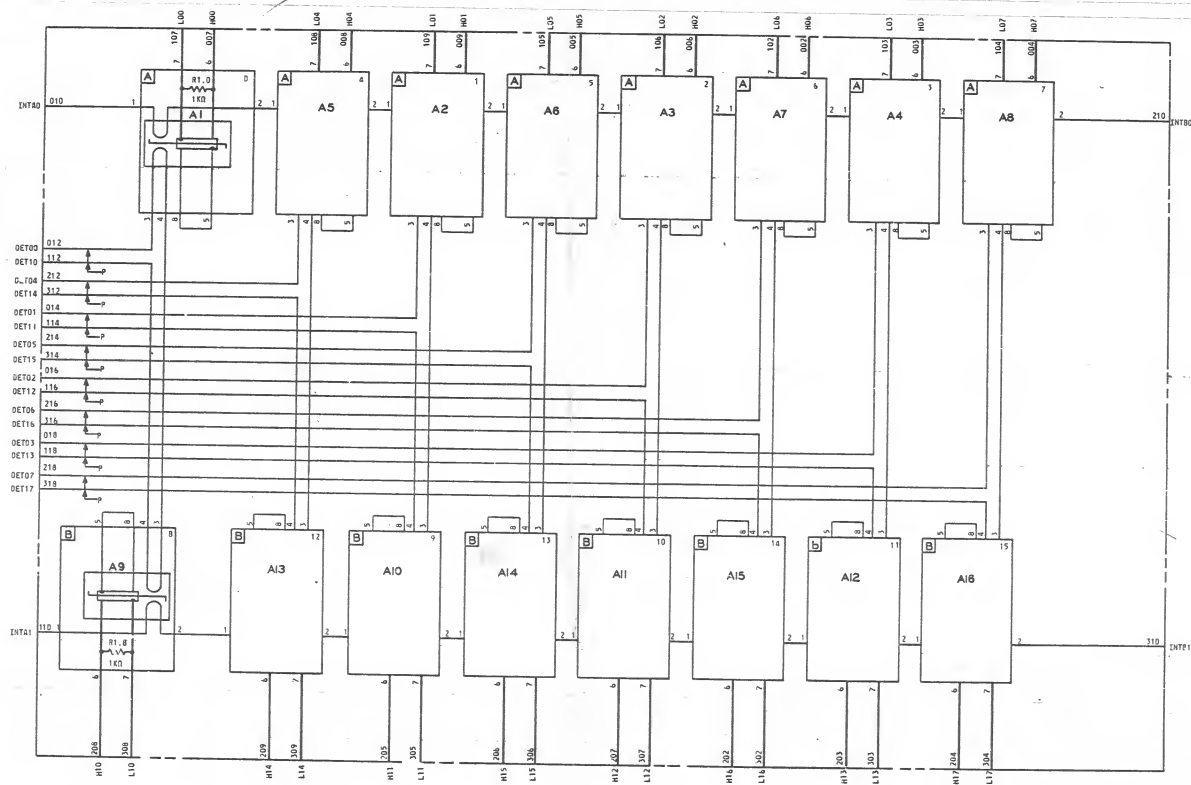


TRUNK FERROS CIRCUIT



COMPONENT LIST

FERRRO SENSOR



DESIG	LOC	CODE
81	281	2C
82	283	
83	284	
84	286	
85	282	
86	284	
87	285	
88	287	
89	2F0	
810	2F2	
811	2F4	
812	2F6	
813	2F2	
814	2F3	
815	2F5	
816	2F7	

RESISTORS

DESIG	CODE
(16) R1.0 - R1.15	K5-20N16A1A, 1KΩ

CIRCUIT DESCRIPTION

PURPOSE OF CIRCUIT

THIS CIRCUIT PROVIDES 16 FERRRO SCAN POINT ELEMENTS WHICH ARE USED TO FORM THE MASTER SCANNER MATRIX.

THE FC183 FERRRO CIRCUIT PACK HAS 16 FERRROS (TYPE 2C) MOUNTED TO FORM A 2-BY-8 MATRIX. THE INTERROGATE WINDINGS OF THE (EIGHT) FERRROS WHICH FORM A HALF ROW ARE CONNECTED IN SERIES AND THE READOUT WINDINGS OF EACH FERRRO IN ONE HALF ROW IS CONNECTED IN SERIES WITH THE READOUT WINDINGS OF THE CORRESPONDING FERRRO IN THE OTHER HALF ROW. ALL CONTROL WINDINGS OF THE FERRROS ON THE FC183 FERRRO PACK ARE ARRANGED INTERNALLY IN THE LOOP CONFIGURATION.

IN THE LOOP CONFIGURATION, THE FERRRO CONTROL WINDINGS ARE CONNECTED IN A SERIES ALONG LOOP ON THE CIRCUIT PACK. BATTERY AND GROUND TO SATURATE THE FERRROS MUST BE SUPPLIED EXTERNALLY BY THE USING CIRCUIT. RESISTORS TO LIMIT 10-2 CURRENT IN THE CONTROL WINDINGS MUST BE PROVIDED BY THE USING CIRCUIT.

A 1000 OHM RESISTOR IS PROVIDED IN PARALLEL WITH THE CONTROL WINDINGS OF EACH FERRRO TO LIMIT THE VOLTAGE SURGE WHEN THE CURRENT TO THE CONTROL WINDINGS IS INTERRUPTED.

FUNCTIONAL DESCRIPTION

THE FERRRO IS THE BASIC SCAN ELEMENT OF A SCANNER. IT CAN BE CONSIDERED A 2-WINDING TRANSFORMER COUPLING (THE ABILITY TO INDUCE A SIGNAL FROM THE PRIMARY WINDING TO THE SECONDARY WINDING) IS CONTROLLED BY THE AMOUNT OF CURRENT IN THE CONTROL WINDINGS. THE PRIMARY AND SECONDARY WINDINGS OF THE TRANSFORMER ARE ASSOCIATED WITH THE INTERROGATE AND READOUT WINDINGS, RESPECTIVELY.

FC183 CIRCUIT PACK

BELL TELEPHONE LABORATORIES

CPG-FC183
SHEET 3

6S

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